IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Applicant	:	Alessandro Muti, et al.	
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Title	:	System & Method for Transferring Data Over a Network	
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Via EFS-Web Submission – 12/3/2007

Mail Stop Amendment
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

REQUEST FOR ONE-MONTH EXTENSION OF TIME

It is hereby requested that the time period for responding to the outstanding Office Action be extended for one month or until December 3, 2007. Enclosed is the Petition fee of $120.00.

AMENDMENT

In response to the Office Action mailed August 2, 2007, Applicants respond in the above-identified application as follows:

Amendment to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 10 of this paper.

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. Claims 1, 20-28, and 31 have been amended, and no claims have been canceled or added herein.

Listing of Claims

1. (Currently Amended) A method of transferring a set of data over a network between a local computing device and a remote computing device, the method comprising:

monitoring the level of actual network bandwidth utilization of the local computing device;

identifying a maximum monitored level, wherein the maximum monitored level is a maximum of the monitored level of actual network bandwidth utilization of the local computing device;

calculating a threshold level of utilization as a function of the maximum monitored level of utilization; and

based on a determination that ~~if~~ the actual level is less than the threshold level, transferring at least a portion of the set of data over the network between the local computing device and the remote computing device.

2. (Original) The method of claim 1, wherein a client receives the data over the network from a server.

3. (Original) The method of claim 2, wherein said monitoring occurs at the interface between the client and the network.

4. (Original) The method of claim 1, wherein the network is the Internet.

5. (Original) The method of claim 1, wherein the threshold level is equal to a predetermined percentage of the maximum monitored level.

6. (Original) The method of claim 1, wherein the set of data includes a software update.

7. (Original) The method of claim 1, further comprising repeating at least said monitoring step each time a portion of the set of data is received.

8. (Original) The method of claim 7, wherein said receiving step includes separately receiving a plurality of discrete portions of the set of data over the network when the actual level is less than the threshold level.

9. (Original) The method of claim 8, further comprising incrementing a counter each time a discrete portion of the data is received over the network.

10. (Original) The method of claim 9, wherein the size of the discrete portions of the data is a function of the value of the counter.

11. (Canceled)

12. (Original) The method of claim 9, further comprising clearing the counter after receiving all of the plurality of discrete portions of the data over the network.

13. (Original) The method of claim 9, further comprising clearing the counter if the level of actual utilization becomes greater than the threshold level.

14. (Original) The method of claim 8, further comprising suspending the receipt of discrete portions of the data if the level of actual utilization becomes greater than the threshold level.

15. (Original) The method of claim 14, further comprising resuming the receipt of discrete portions of the data from the point of suspension when the level of actual utilization becomes less than the threshold level.

16. (Original) The method of claim 1, further comprising:

repeating said monitoring step each time a portion of the set of data is received;

identifying a maximum level of utilization during receipt of the set of data; and

calculating a threshold level of utilization for the set of data as a function of the maximum level of utilization identified during receipt of the set of data.

17. (Original) The method of claim 16, wherein said identifying step includes estimating the maximum level of utilization during receipt of the set of data by calculating an average level of utilization for the set of data upon repeating said monitoring step a predetermined number of times during receipt of the set of data.

18. (Original) The method of claim 16, further comprising receiving at least a portion of the set of data over the network if the actual level is less than the threshold level for the set of data.

19. (Original) The method of claim 16, further comprising receiving at least a portion of a second set of data over the network if the actual level is less than the threshold level for the set of data.

20. (Currently Amended) A ~~computer readable~~ computer-storage medium having computer-executable instructions for performing the method recited in claim 1.

21. (Currently Amended) A computer system having a memory, an operating system and a central processor, said processor being operable to execute the instructions stored on the ~~computer readable~~ computer-storage medium of claim 20.

22. (Currently Amended) A ~~computer readable~~ computer-storage medium having stored thereon a data structure useable by a computing device for transferring data over a network, the data structure comprising:

a first data field containing data representing a maximum monitored level, wherein the maximum monitored level is a maximum of a monitored level of actual network bandwidth utilization; and

a second data field containing data representing a threshold level of network bandwidth utilization below which data may be transferred over the network without interfering with other network activity, wherein said second data field is derived from said first data field by calculating the threshold level as a function of the maximum monitored level, and wherein the threshold level is utilized for determining when to transfer data over the network.

23. (Currently Amended) The ~~computer-readable~~ computer-storage medium of claim 22, wherein the threshold level is calculated as a predetermined percentage of the maximum monitored level.

24. (Currently Amended) The ~~computer-readable~~ computer-storage medium of claim 22, wherein the actual network bandwidth utilization is monitored at an interface between a client machine and the network.

25. (Currently Amended) A ~~computer-readable~~ computer-storage medium having computer-executable components for managing the transfer of data over a network between a local computing device and a remote computing device, comprising:

a bandwidth monitoring component which monitors the level of actual bandwidth utilization for a network connection of the local computing device and identifies a maximum monitored level, wherein the maximum monitored level is a maximum of the monitored level of actual bandwidth utilization for the network connection of the local computing device;

a threshold calculating component which calculates a threshold level of utilization as a function of the maximum monitored level of utilization identified by said bandwidth monitoring component; and

a transfer management component which manages the transfer of data over the network between the local computing device and the remote computing device when the level of actual bandwidth utilization is less than the threshold level of utilization.

26. (Currently Amended) The ~~computer-readable~~ computer-storage medium of claim 25, wherein the network connection is an interface between a client machine and the network.

27. (Currently Amended) The ~~computer-readable~~ computer-storage medium of claim 25, wherein the threshold level is calculated as a predetermined percentage of the maximum monitored level.

28. (Currently Amended) A method of communicating between a client process and a server process over a network, the method comprising:

(a) issuing to the server process a first download request which identifies a file and which requests that the server process ~~download~~ transfer a first segment of the file over the network to the client process ~~, provided~~ when an ~~the~~ actual network bandwidth utilization for the client process is less than a threshold level below which data may be transferred over the network without interfering with other network activity for the client process, wherein the threshold level is calculated as a function of a maximum monitored level, and wherein the maximum monitored level is a maximum of a monitored level of actual network bandwidth utilization for the client process;

(b) receiving, from ~~downloading, by~~ the server process, the first segment of the file;

(c) issuing to the server process a further download request which is associated with the file and which requests that the server process transfer

~~download~~ a further segment of the file over the network~~, provided~~ when the actual network bandwidth utilization is less than the threshold level;

(d) receiving, from ~~downloading, by~~ the server process, the further segment of the file; and

(e) repeating steps (c) and (d) until the server process has transferred ~~downloaded~~ each segment of the file over the network.

29. (Previously Presented) The method of claim 1, wherein a client machine receives the data over the network without substantially interfering with the ability of a user of the client machine to engage in other network activity.

30. (Previously Presented) The method of claim 1, wherein the data is received over the network without substantially interfering with any other network activity.

31. (Currently Amended) A method for a computer to regulate a data transfer between the computer and a network through which the computer communicates, the method being performed by the computer and comprising:

monitoring a changing rate of amount of data communicated between the network and the computer;

repeatedly determining a changing maximum of the rate of amount of data communicated between the network and the computer;

repeatedly determining a changing threshold rate of data communication based on the changing maximum rate of amount of data communicated between the network and the computer; and

repeatedly determining whether to resume or suspend the data transfer between the network and the computer based on the changing threshold rate of data communication and based on the changing rate of amount of data communicated between the computer and the network, and resuming or suspending the data transfer accordingly until the data transfer is complete.

REMARKS

Applicants respectfully request reconsideration of the present application. No new matter has been added to the present application. Claims 1-10 and 12-30 have been rejected in the Office Action. Claims 1, 20-28, and 31 have been amended, and no claims have been canceled or added in this Amendment. Accordingly, claims 1-10 and 12-31 are pending herein. Claims 1-10 and 12-31 are believed to be in condition for allowance and such favorable action is respectfully requested.

Interview Summary

Applicants' representative and the Examiner discussed the rejection of the claims under 35 U.S.C. § 101 on November 29, 2007. The Examiner kindly indicated that proposed claims amendments and the arguments (as set forth in this Amendment) would be taken into consideration.

Rejections based on 35 U.S.C. § 101

Claims 1-10 and 12-31 stand rejected under 35 U.S.C. § 101 because they are alleged to be directed to non-statutory subject matter. Although Applicants believe that each of the claims as previously presented were directed to statutory subject matter (e.g., for the reasons set forth in the Response dated July 9, 2007), to prevent further prosecution delays, Applicants have submitted claim amendments herein and the following remarks that demonstrate that the claims are directed to statutory subject matter. As such, Applicants respectfully request withdrawal of the rejection of the claims under 35 U.S.C. § 101.

With respect to independent claims 1, 25, 28, and 31, the claims have been rejected as allegedly not providing a "useful, concrete, and tangible result" because the claims are alleged to contain a conditional limitation.

As amended herein, independent claim 1 does not contain a conditional limitation. In particular, claim 1 now recites "based on a determination that the actual level is less than the threshold level, transferring at least a portion of the set of data over the network between the local computing device and the remote computing device." Accordingly, claim 1 affirmatively recites transferring data over a network between two devices, and, as such, clearly provides a "useful, concrete, and tangible result."

Applicants respectfully submit that independent claim 25 does not recite a conditional limitation. Additionally, Applicants note that claim 25 recites "a transfer management component which manages the transfer of data over the network between the local computing device and the remote computing device when the level of actual bandwidth utilization is less than the threshold level of utilization." As such, the "useful, concrete, and tangible result" of claim 25 is the transfer of data over the network between the local computing device and the remote computing device.

Claim 28 has been amended herein such that it clearly does not contain any conditional limitations and recites a "useful, concrete, and tangible result" In particular, claim 28 recites repeating a number of steps until a server process has transferred each segment of a file over the network. The "useful, concrete, and tangible result" is that each segment of a file is transferred over the network.

Applicants respectfully submit that claim 31 does not contain a conditional limitation and recites a "useful, concrete, and tangible result." In particular, claim 31 recites

"repeatedly determining whether to resume or suspend the data transfer between the network and the computer based on the changing threshold rate of data communication and based on the changing rate of amount of data communicated between the computer and the network, and resuming or suspending the data transfer accordingly until the data transfer is complete." Page 3 of the Office Action indicates that claim 31 "merely determines whether or not to suspend or resume that data transfer. Applicants respectfully submit that the claim also recites "resuming or suspending the data transfer accordingly until the data transfer is complete." Accordingly, the claim includes more than just a mere determination as suggested in the Office Action. As such, the "useful, concrete, and tangible result" of claim 31 includes a data transfer between a network and a computer.

Independent claim 22 was rejected "because it is a data structure on a computer-readable medium." More specifically, the Office Action states that the "data structure merely stores values and contains non-function descriptive material and is therefore non-statutory." Independent claim 22 has been amended herein to more clearly recite the subject-matter of the claim. In particular, independent claims 22, recites a computer-storage medium having stored thereon a data structure useable by a computing device for transferring data over a network. Applicants respectfully submit that independent claim 22, as amended herein, is drawn to statutory subject matter.

According to MPEP §2106, when functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. *See In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that

increases computer efficiency held statutory) and *In re Warmerdam*, 33 F.3d 1354, at 1360-61, (Fed. Cir. 1994) (claim to computer having a specific data structure stored in memory held statutory product-by-process claim). Applicants submit that the data structure embodied on a computer-storage medium as recited in amended claim 22, imparts functionality when employed as a computer component as it is utilized for transferring data over a network. More particularly, the claimed data structure includes a threshold level that may be used to determine when to transfer data over a network.

Claims 2-10, 12-21, 23, 24, 26, 27, 29, and 30 depend from independent claims 1, 22, 25, 28, and 31 and are directed to statutory subject-matter for at least the reasons cited above for each of the independent claims. Accordingly, Applicants respectfully submit that claims 1-10 and 12-31 are directed to statutory subject matter and request withdrawal of the 101 rejection of the claims.

Rejections based on 35 U.S.C. § 103

A. Applicable Authority

Title 35 U.S.C. § 103(a) declares, a patent shall not issue when "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." The Supreme Court in *Graham v. John Deere* counseled that an obviousness determination is made by identifying: the scope and content of the prior art; the level of ordinary skill in the prior art; the differences between the claimed invention and prior art references; and secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1 (1966).

To support a finding of obviousness, the initial burden is on the Office to apply the framework outlined in *Graham* and to provide some reason, or suggestions or motivations found either in the prior art references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the prior art reference or to combine prior art reference teachings to produce the claimed invention. See, *Application of Bergel,* 292 F. 2d 955, 956-957 (1961). Thus, in order "[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success [in combining the references]. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations." *See* MPEP § 2143. Recently, the Supreme Court elaborated, at pages 13-14 of *KSR*, it will be necessary for [the Office] to look at interrelated teachings of multiple [prior art references]; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by [one of] ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the [patent application]." *KSR v. Teleflex*, 127 S. Ct. 1727 (2007).

B. Rejections based on Rakavy and Garg

Claims 1-9, 14-27, and 29-31 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Rakavy reference in view of the Garg reference. Applicants respectfully traverse the obviousness rejection for claims 1-9, 14-27, and 29-31. In particular, the Rakavy and Garg references, either alone or in combination, fail to teach or suggest all the claim limitations for each of these claims. Additionally, there is no suggestion or motivation to

combine the Rakavy and Garg references in the manner set forth in the Office Action dated 8/2/2007, nor is there any suggestion or motivation to modify the Rakavy and/or Garg references to achieve the claimed invention.

1) Claims 1-9, 14-21, 29, and 30

Independent claim 1 is directed to a method of transferring a set of data over a network between a local computing device and a remote computing device. In accordance with the method of claim 1, the level of actual network bandwidth utilization of the local computing device is monitored. *Id.* at p. 14, lines 15-20. A maximum of the monitored level of actual network bandwidth utilization of the local computing device is identified. *Id.* at p. 16, lines 8-12. A threshold level of utilization is then calculated as a function of the maximum monitored level of actual network bandwidth utilization. *Id.* at p. 16, lines 12-17. Based on a determination that the actual level of network bandwidth utilization is less than the threshold level, at least a portion of the set of data is transferred over the network between the local computing device and the remote computing device. *Id.* at p. 17, lines 4-14.

The Rakavy reference discusses a type of software technology that is referred to as a "Polite Agent." *Rakavy*, col. 13, lines 5-6. The Polite Agent "transmits information during periods of low line utilization." *Id.* at col. 13, lines 11-12. "Low line utilization occurs when the communications line is busy no more than a predetermined percentage of the time." *Id.* at col. 13, lines 35-36. At a point when "the communications resource utilization remains low and ample resources are available the software agent performs its designated data transfer task." *Id.* at col. 13, lines 23-25.

Although Rakavy's method and the invention of claim 1 address essentially the same problem, there are significant differences between the two approaches with respect to how

a threshold below which data may be transferred is established. In particular, the "Polite Agent" software technology discussed in the Rakavy reference uses a predetermined percentage of time that a communications line is busy as a threshold (*see, e.g., Rakavy*, col. 13, lines 35-44), while the invention in claim 1 uses a threshold level calculated based on a maximum monitored level of actual network bandwidth utilization. The Rakavy reference fails to teach or suggest "identifying a maximum monitored level, wherein the maximum monitored level is a maximum of the monitored level of actual network bandwidth utilization" and "calculating a threshold level of utilization as a function of the maximum monitored level of utilization." Following from its failure to teach or suggest calculating a threshold level based on a maximum monitored level of actual network bandwidth utilization, the Rakavy reference necessarily also fails to teach or suggest the last element: "based on a determination that the actual level is less than the threshold level, receiving at least a portion of the set of data over the network."

The differences between the approach in the Rakavy reference and the invention of claim 1 are significant. Instead of relying on the percentage of time that a communications line is busy as in the Rakavy reference, the method of claim 1 includes identifying a maximum monitored level of actual network bandwidth utilization and using that maximum monitored level to calculate a threshold level below which data may be received. As such, the invention of claim 1 provides a substantial advantage over the Rakavy reference's solution in that the invention of claim 1 optimizes the use of network bandwidth. By contrast, the Rakavy reference's solution is less effective because downloading data based on the percentage of time the network connection is busy will often result in underutilization of the network bandwidth (as explained in Applicants' specification at page 16, line 18 through page 17, line 1).

The Examiner has acknowledged that the Rakavy reference fails to disclose multiple limitations of the invention of claim 1 (*see, e.g., Office Action dated 8/2/2007*, p. 4), but has minimized the extent of the differences between the Rakavy reference and claim 1. As set forth by the United States Supreme Court in *Graham v. John Deere*, 383 U.S. 1 (1966), inquiries as a background for determining obviousness include, *inter alia*, determining the scope and contents of the prior art, and ascertaining the differences between the prior art and the claims at issue. *See, e.g.*, MPEP § 2141. In the present case, the Examiner has not adequately ascertained the differences between the Rakavy reference and the invention of claim 1. The approach in Rakavy does not involve identifying a maximum monitored level of actual bandwidth utilization, using that maximum monitored level to calculate a threshold level, and transferring data when the actual bandwidth utilization is less than that calculated threshold level. Rather, the Rakavy reference teaches a different approach based on the percentage of time the network connection is busy. Rakavy's approach is a less effective one for the reasons stated above and in Applicants' specification at page 16, line 18 through page 17, line 1. Thus, the Applicants' claimed invention advances the state of the art beyond what is taught in the Rakavy reference.

The Garg reference was cited by the Examiner in an attempt to demonstrate that the differences between the invention of claim 1 and the Rakavy reference were merely obvious differences. However, the Examiner's conclusion is based on not only an incorrect understanding of claim 1 as noted above, but also an incorrect understanding of what is taught in the Garg reference.

The Garg reference relates to a system for monitoring a network environment to determine whether a problem or potential problem exists in the network. *See, e.g., Garg*, Abstract; col. 2, lines 38-42. The system monitors the network environment by collecting recent

operating data associated with the network environment. *Id.*, at Abstract; col. 2, lines 53-55. The network environment is analyzed by comparing the collected data against cognitive signatures to identify problems in the network environment. *Id.*, at Abstract; col. 2, lines 55-61. A cognitive signature represents a normal operating mode based on historical data, and separate cognitive signatures are maintained for different time periods for different days of the week. *Id.*, at col. 5, lines 32-33; col. 8, lines 26-28. For instance, a cognitive signature may represent the normal operation for Monday from 9:00 am – 10:00 am. *Id.*, at col. 8, lines 59-61. By comparing collected data against a cognitive signature for a given time period, the system in the Garg reference can determine whether the collected data deviates from normal operation represented by the cognitive signature. *See, e.g., id.*, Abstract, col. 2, lines 39-61; col. 5, lines 32-33; col. 8, lines 26-28.

Initially, Applicants note that the Garg reference is directed to monitoring a network as a whole and is not concerned with monitoring bandwidth utilization for a local computing device and providing for background transmission of a set of data for the local computing device as in claim 1. In contrast to the invention of claim 1, the Garg reference repeatedly indicates that it is directed to monitoring a network environment. For instance, the Garg reference uses a network monitor 22, which has a data collection module 30 such that the monitor may collect data of other devices throughout the network to perform its analysis. *See, e.g., id.*, FIGS. 1 and 2. Throughout the Garg reference, including step 42 of FIG. 3, step 60 of FIG. 4 and step 94 of FIG. 6B, the network monitor 30 "Collect[s] Data from the Network." The Garg also reference discusses a cognitive signature module 34 that deals with data from many sources. The "Analysis module analyzes current performance or operation of the network environment." *Id.*, col. 6, line 6 (emphasis added). Additionally, Garg indicates that it "analyzes

operation and performance by comparing the current data collected from the network (i.e., the data representing the current performance or operation of the network environment) with the cognitive signatures (i.e., the historical data regarding performance or operation of the network environment)." *Id.*, col. 6, line 58 (emphasis added).

Additionally, the Garg reference simply does not teach or suggest any steps related to "identifying a maximum monitored level, wherein the maximum monitored level is a maximum of the monitored level of actual bandwidth utilization of the local computing device" and "calculating a threshold level of utilization [below which data may be transferred as indicated by the last element of claim 1] as a function of the maximum monitored level of utilization" as recited by claim 1. The Examiner appears to be either misinterpreting the Garg reference or taking what the Applicants have taught in the present application and attempting to read these limitations into the Garg reference. As noted hereinabove, claim 1 is concerned with transferring data in a manner that minimizes interference with other data transmissions, and, as the threshold for the data transfer is based on the maximum monitored level of utilization, the data transfer can take advantage of otherwise unused bandwidth with minimal impact on other network traffic. In contrast, the Garg reference is not concerned with transmitting data in the background of other data transmissions. Instead, the Garg reference is concerned with monitoring a network environment for problems by analyzing collected data to determine if it deviates from normal operations (as indicated by historical network data defined by cognitive signatures). Examining a network environment to determine if recent data deviates from normal operations is significantly different from the recited limitations of independent claim 1.

The invention of claim 1 also employs a threshold level of utilization at which interference with other network activity caused by a background data transmission will be

minimized. In particular, claim 1 sets the threshold level of utilization below an identified maximum monitored level of utilization to ensure that there is sufficient bandwidth to allow background data transmission while minimizing interference with other data transmissions. In contrast, the cognitive signatures discussed in the Garg reference represent historical operating information for a given time period (e.g., Monday 9:00 am – 10:00 am). *See, e.g., id.*, col. 5, lines 32-49. By using cognitive signatures, the Garg reference can determine whether current network operation deviates from historical network operation for the time period corresponding with the current network operation. *See, e.g., id.* col. 6, lines 6-11 ("Analysis module 38 analyzes current performance or operation of the network environment by comparing the data collected via the network with the cognitive signatures, which represent past performance or operation of the network environment at similar times") (emphasis added). For instance, the system in the Garg reference may monitor the network on a particular Monday between 9:00 am and 10:00 am and compare the collected data against historical information for that time period (i.e., Monday 9:00 am – 10:00 am) to determine whether there is a problem. Clearly, this is different from the invention of claim 1 in which a threshold value is determined based on a maximum monitored level of utilization for a local computing device and used to determine whether a background data transmission may occur with minimal interference with other data transmissions.

Further, Applicants traverse the inherency conclusion at page 4 of the Office Action with respect to the "monitoring" limitation of claim 1. Monitoring connotes checking or comparing. However, the Garg reference does not teach or suggest *monitoring* an individual device. Instead, the Garg reference discuss collecting data from many sources on the network and using that combination of data to monitor the network as a whole. The Office Action

reasons that "otherwise, there would be no way to determine if the transmission of the data would cause the connection data to exceed the maximum threshold value." However, the Garg reference does not discuss or even relate to transmission of data or regulation thereof. The Garg reference is concerned with detecting anomalous conditions of a network per se. As such, the cited basis for inherency does not exist in the Garg reference.

Moreover, there is no suggestion or motivation to combine the Rakavy and Garg references, nor is there any suggestion or motivation to modify the Rakavy and/or Garg references to achieve the invention of claim 1. The Garg reference is outside the art relating to controlling a data transfer. As such, there is no motivation to combine the Garg reference because the Garg reference is intended for a different type of problem in a different area of art. The Rakavy reference is concerned with limiting a download to periods of low line utilization (based on percentage of time that a communications line is busy), while the Garg reference is concerned with monitoring the performance of a network to identify problems. The Examiner has not identified any problems with the technique of the system in the Rakavy reference itself, nor does the Rakavy reference itself suggest any shortcoming with how it finds a threshold. In sum, no teaching of the Rakavy or Garg references or elsewhere suggests that the system in the Garg reference would improve a system such as in the Rakavy reference, and nothing in the references or elsewhere suggest a need for any particular improvement to the system in Rakavy.

Additionally, Applicants submit that the combination of the Rakavy and Garg references in the Office Action is based on a mischaracterization of the Garg reference. In particular, Applicants traverse the statement that "[i]n analogous art, Garg discloses another method of transferring data over a network." *Office Action dated 8/2/2007*, p. 4. The Garg reference simply is not concerned with a method of transferring data over a network. To the

extent the Examiner disagrees, the Examiner is requested to provide a citation to the Garg reference discussing transferring data over a network where the data transferred is regulated by monitoring. Applicants also traverse the Office Action's conclusion that the Garg reference is analogous art. The Office Action states that the Garg reference discusses "utilizing historical values in conjunction with current monitored levels in order to detect problems or potential problems with the device as supported by Garg (col. 2, lines 33-66)" *Office Action dated 8/2/2007*, p. 5. However, this cited portion of the Garg reference actually mentions Garg's "monitoring system . . . detects problems or potential problems in a network environment by comparing recent network operation with historical network operation." *Garg*, col. 2, lines 33-36 (emphasis added). As indicated previously and is evident from the cited portion, the Garg reference monitors a network, not a device.

Further, Applicants respectfully submit that there is no suggestion or motivation to modify the Rakavy reference to achieve the invention of claim 1 because the modification would change the principle of operation of the system in the Rakavy reference. "If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)." MPEP § 2143.01. The principle of operation of the system in the Rakavy reference is to transmit information during periods of low line utilization that occurs when the communications line is busy no more than a predetermined percentage of the time. *See, e.g., Rakavy*, col. 13, lines 11-12, and lines 35-36. To modify the Rakavy reference in an attempt to achieve the invention of claim 1 would change the principle of operation of the Rakavy reference because instead of relying on the percentage of time that a communications line is busy, the system would set a

threshold based on an identified maximum monitored level of actual bandwidth utilization and use that threshold for determining when to transfer data. As a result, the modification would allow data to be transferred at times when it would not be allowed using the system in Rakavy. Accordingly, Applicants respectfully submit that the modification would change the principle of operation of the system in the Rakavy reference, and thus there is no suggestion or motivation to modify the Rakavy reference to achieve the invention of claim 1.

Accordingly, Applicants respectfully submit that independent claim 1 is patentable over the Rakavy and Garg references for at least the reasons described hereinabove. As such, Applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection of independent claim 1. Each of claims 2-9, 14-21, 29, and 30 depends, either directly or indirectly, from independent claim 1, and accordingly, these claims are believed to be in condition for allowance for at least the above-cited reasons.

2) Claims 22-24

Referring now to claims 22-24, as noted above, independent claim 22 is directed to a computer-storage medium have stored thereon a data structure. *Id.* at p. 6, line 16 through p. 8, line 9; p. 13, lines 19-23. The data structure includes a first data field containing data representing a maximum monitored level, wherein the maximum monitored level is a maximum of a monitored level of actual network bandwidth utilization. *Id.* at p. 12, lines 10-14; p. 13, line 19 through p. 14, line 2; p. 16, lines 8-12. Additionally, the data structure includes a second data field containing data representing a threshold level of network bandwidth utilization below which data may be transferred over the network without interfering with other network activity, wherein the second data field is derived from the first data field by calculating the threshold level

as a function of the maximum monitored level. *Id.* at p. 12, lines 10-14; p. 13, line 19 through p. 14, line 2; p. 16, lines 12-16.

On page 10 of the Office Action dated 8/2/2007, the Examiner rejected claims 22-24 for "similar reasons as stated above," presumably referring to the rejection of claims 1, 3, and 5 and the combination of the Rakavy and Garg references. Applicants respectfully traverse the obviousness rejection of claims 22-24 because the Rakavy and Garg references, either alone or in combination, fail to teach or suggest all the claim limitations for each of these claims. In particular, the references fail to teach or suggest a computer-storage medium having a data structure as that recited in independent claim 22. First, the Rakavy and Garg references, either alone or in combination, fail to teach or suggest a data structure that includes "a first data field containing data representing a maximum monitored level, wherein the maximum monitored level is a maximum of a monitored level of actual network bandwidth utilization" as recited by independent claim 22. As noted above with respect to independent claim 1, the Rakavy reference fails to teach anything remotely similar to a maximum monitored level of actual network bandwidth utilization. The Garg reference fails to cure this deficiency as the reference is concerned with monitoring a network based on cognitive signatures to identify network problems, which differs from a maximum monitored level of actual network bandwidth utilization as recited by independent claim 22.

Next, the Rakavy and Garg references, either alone or in combination, fail to teach or suggest a data structure that includes "a second data field containing data representing a threshold level of network bandwidth utilization below which data may be transferred over the network without interfering with other network activity, wherein the second data field is derived from the first data field by calculating the threshold level as a function of the maximum

monitored level" as recited by independent claim 22. The threshold used in the Rakavy reference is based on a predetermined percentage of time a communications line is busy as opposed to being calculated as a function of a maximum monitored level. This difference is significant as noted hereinabove and in Applicants' specification at page 16, line 18 through page 17, line 1. The Garg reference also fails to cure the deficiency of the Rakavy reference with respect to this limitation. As previously noted, the Garg reference is concerned with monitoring a network using cognitive signatures to identify problems. The Garg reference simply fails to teach or suggest any threshold level of network bandwidth utilization below which data may be transferred without interfering with other network activity. In contrast, the Garg reference specifically discusses identifying problems by determining whether current data deviates from historical data for a time period corresponding with the current data.

Moreover, there is no suggestion or motivation to combine the Rakavy and Garg references to achieve the invention of claims 22-24 and the combination is improper for at least the same reasons as noted above with respect to independent claim 1.

Accordingly, Applicants respectfully submit that independent claim 22 is patentable over the Rakavy and Garg references for at least the reasons described hereinabove. As such, Applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection of independent claim 22. Each of claims 23 and 24 depends from independent claim 22, and accordingly, these claims are believed to be in condition for allowance for at least the above-cited reasons.

3) Claims 25-27

Turning now to claims 25-27, independent claim 25 is directed to a computer-storage medium having computer-executable components for managing the transfer of data over

a network. The components include a bandwidth monitoring component, a threshold calculating component, and a transfer management component. The bandwidth monitoring component monitors the level of actual bandwidth utilization for a network connection and identifies a maximum monitored level, wherein the maximum monitored level is a maximum of the monitored level of actual bandwidth utilization for the network connection. *Id.* at p. 14, lines 15-20; p. 16, lines 8-12. The threshold calculating component calculates a threshold level of utilization as a function of the maximum monitored level of utilization identified by the bandwidth monitoring component. *Id.* at p. 16, lines 12-17. The transfer management component manages the transfer of data over the network when the level of actual bandwidth utilization is less than the threshold level of utilization. *Id.* at p. 17, lines 4-14.

On page 10 of the Office Action dated 8/2/2007, the Examiner rejected claims 25-27 for "similar reasons as stated above," presumably referring to the rejection of claims 1, 3, and 5 and the combination of the Rakavy and Garg references. Applicants traverse the obviousness rejection of claims 25-27 because the Rakavy and Garg references, either alone or in combination, fail to teach or suggest all the claim limitations for each of these claims.

Initially, the Rakavy and Garg references, either alone or in combination, fail to teach or suggest a "bandwidth monitoring component which monitors the level of actual bandwidth utilization for a network connection and identifies a maximum monitored level, wherein the maximum monitored level is a maximum of the monitored level of actual bandwidth utilization for the network connection" as recited by independent claim 25. As noted above with respect to independent claim 1, the Rakavy reference fails to teach anything remotely similar to identifying a maximum monitored level of actual network bandwidth utilization. The Garg

reference fails to cure this deficiency as the reference is concerned with monitoring a network for problems using cognitive signatures.

Next, the Rakavy and Garg references, either alone or in combination, fail to teach or suggest a "threshold calculating component which calculates a threshold level of utilization as a function of the maximum monitored level of utilization identified by the bandwidth monitoring component" as recited by independent claim 25. As noted above with respect to independent claim 1, the threshold used in the Rakavy reference is based on a predetermined percentage of time a communications line is busy as opposed to being calculated as a function of a maximum monitored level. This difference is significant as noted hereinabove and in Applicants' specification at page 16, line 18 through page 17, line 1. The Garg reference also fails to cure the deficiency of the Rakavy reference with respect to this limitation. As previously noted, the Garg reference is concerned with monitoring a network using cognitive signatures to identify problems. The Garg reference simply fails to teach or suggest any threshold level of utilization that is calculated based on a maximum monitored level of actual network bandwidth utilization.

Further, the Rakavy and Garg references, either alone or in combination, fail to teach or suggest "a transfer management component which manages the transfer of data over the network when the level of actual bandwidth utilization is less than the threshold level of utilization" as recited by independent claim 25. Because the Rakavy and Garg references fail to teach or suggest a bandwidth monitoring component and threshold calculating component that provide a threshold level based on a maximum monitored level of utilization, the references similarly fail to teach or suggest a transfer management component that employs such a threshold level to manage the transfer of data.

Moreover, there is no suggestion or motivation to combine the Rakavy and Garg references to achieve the invention of claims 25-27 and the combination is improper for at least the same reasons as noted above with respect to independent claim 1.

Accordingly, Applicants respectfully submit that independent claim 25 is patentable over the Rakavy and Garg references for at least the reasons described hereinabove. As such, Applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection of independent claim 25. Each of claims 26 and 27 depends from independent claim 25, and accordingly, these claims are believed to be in condition for allowance for at least the above-cited reasons.

3) Claim 31

Claim 31 is directed to a method for a computer to regulate a data transfer between the computer and a network through which the computer communicates. The method includes monitoring a changing rate of amount of data communicated between the network and the computer. A changing maximum of the rate of amount of data communicated between the network and the computer is repeatedly determined. Additionally, a changing threshold rate of data communication is repeatedly determined based on the changing maximum rate of amount of data communicated between the network and the computer. Whether to resume or suspend the data transfer between the network and the computer is further repeatedly determined based on the changing threshold rate of data communication and based on the changing rate of amount of data communicated between the computer and the network, and resuming or suspending the data transfer accordingly until the data transfer is complete.

On page 10 of the Office Action dated 8/2/2007, the Examiner rejected claim 31 for "similar reasons as stated above," presumably referring to the rejection of claim 1 and the

combination of the Rakavy and Garg references. Applicants traverse the obviousness rejection of claim 31 because the Rakavy and Garg references, either alone or in combination, fail to teach or suggest all the claim limitations for each of these claims.

Initially, the Rakavy and Garg references, either alone or in combination, fail to teach or suggest a "repeatedly determining a changing maximum of the rate of amount of data communicated between the network and the computer" as recited by independent claim 31. The Rakavy reference fails to teach anything remotely similar to a changing maximum of the rate of amount of data communicated between a network and a computer. The Garg reference fails to cure this deficiency as the reference is concerned with monitoring a network for problems using cognitive signatures. A peak historical utilization for a network as discussed in the Garg reference is different from a changing maximum of the rate of amount of data communicated between a network and a computer.

Next, the Rakavy and Garg references, either alone or in combination, fail to teach or suggest a "repeatedly determining a changing threshold rate of data communication based on the changing maximum rate of amount of data communicated between the network and the computer" as recited by independent claim 31. As noted above with respect to independent claim 1, the threshold used in the Rakavy reference is based on a predetermined percentage of time a communications line is busy as opposed to being calculated as a function of a maximum rate of amount of data communicated between the network and the computer. This difference is significant as noted hereinabove and in Applicants' specification at page 16, line 18 through page 17, line 1. The Garg reference also fails to cure the deficiency of the Rakavy reference with respect to this limitation. As previously noted, the Garg reference is concerned with monitoring a network using cognitive signatures to identify problems. The Garg reference simply fails to

teach or suggest any threshold level of utilization that is calculated based on a maximum rate of amount of data communicated between the network and the computer.

Further, the Rakavy and Garg references, either alone or in combination, fail to teach or suggest "repeatedly determining whether to resume or suspend the data transfer between the network and the computer based on the changing threshold rate of data communication and based on the changing rate of amount of data communicated between the computer and the network, and resuming or suspending the data transfer accordingly until the data transfer is complete" as recited by independent claim 31. Because the Rakavy and Garg references fail to teach or suggest the above-noted features of claim 31 including determining a changing maximum and a changing threshold, the references similarly fail to teach or suggest a resuming or suspending a data transfer based on such parameters.

Moreover, there is no suggestion or motivation to combine the Rakavy and Garg references to achieve the invention of claim 31 and the combination is improper for at least the same reasons as noted above with respect to independent claim 1.

Accordingly, Applicants respectfully submit that independent claim 31 is patentable over the Rakavy and Garg references for at least the reasons described hereinabove. As such, Applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection of independent claim 31.

C. Rejection based on Rakavy, Garg, and Watanabe

Claim 10 was rejected under 35 U.S.C. § 103(a) as being obvious over the Rakavy reference in view of the Garg reference and further in view of the Watanabe reference. Applicants traverse the obviousness rejection of claim 10 because the Rakavy, Garg, and Watanabe references, either alone or in combination, fail to teach or suggest all the claims

limitations for claim 10. Dependent claim 10 depends indirectly from independent claim 1, which includes limitations not taught or suggested by the Rakavy and Garg references as described hereinabove. The addition of the Watanabe reference does not cure these deficiencies as the Watanabe reference similarly fails to teach or suggest these limitations. Further, there is no suggestion or motivation to combine the Rakavy, Garg, and Watanabe references in the manner set forth in the Office Action dated 8/2/2007, nor is there any suggestion or motivation to modify the Rakavy, Garg, and/or Watanabe references to achieve the invention of claim 10. Accordingly, the 103(a) rejection of claim 10 is improper for at least the reasons stated above, and Applicants respectfully request that the withdrawal of the 103(a) rejection of claim 10.

D. Rejection based on Rakavy, Garg, and Elzur

Claim 12 was rejected under 35 U.S.C. § 103(a) as being obvious over the Rakavy reference in view of the Garg reference and further in view of the Elzur reference. Applicants traverse the obviousness rejection of claim 12 because the Rakavy, Garg, and Elzur references, either alone or in combination, fail to teach or suggest all the claims limitations for claim 12. Dependent claim 12 depends indirectly from independent claim 1, which includes limitations not taught or suggested by the Rakavy and Garg references as described hereinabove. The addition of the Elzur reference does not cure these deficiencies as the Elzur reference similarly fails to teach or suggest these limitations. Further, there is no suggestion or motivation to combine the Rakavy, Garg, and Elzur references in the manner set forth in the Office Action dated 8/2/2007, nor is there any suggestion or motivation to modify the Rakavy, Garg, and/or Elzur references to achieve the invention of claim 12. Accordingly, the 103(a) rejection of claim 12 is improper for at least the reasons stated above, and Applicants respectfully request that the withdrawal of the 103(a) rejection of claim 12.

E. Rejection based on Rakavy, Garg, and Kalkunte

Claim 13 was rejected under 35 U.S.C. § 103(a) as being obvious over the Rakavy reference in view of the Garg reference and further in view of the Kalkunte reference. A *prima facie* case of obviousness has not been established for claim 13 because the Rakavy, Garg, and Kalkunte references, either alone or in combination, fail to teach or suggest all the claims limitations for claim 13. Dependent claim 13 depends indirectly from independent claim 1, which includes limitations not taught or suggested by the Rakavy and Garg references as described hereinabove. The addition of the Kalkunte reference does not cure these deficiencies as the Kalkunte reference similarly fails to teach or suggest these limitations. Further, there is no suggestion or motivation to combine the Rakavy, Garg, and Watanabe references in the manner set forth in the Office Action dated 8/2/2007, nor is there any suggestion or motivation to modify the Rakavy, Garg, and/or Watanabe references to achieve the invention of claim 13. Accordingly, the 103(a) rejection of claim 13 is improper for at least the reasons stated above, and Applicants respectfully request that the withdrawal of the 103(a) rejection of claim 13.

F. Rejection based on Buch, Rakavy, and Garg

Claim 28 was rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,463,468 to Buch (the "Buch reference") in view of the Rakavy and Garg references. The Buch reference discloses a technique for free Internet access which involves a method for downloading video advertising files when a user is not actively using the Internet connection. As shown in FIG. 11 and described at column 12, Buch's method determines the ad block size based on the available data rate and perhaps also based on system resources. If the Internet connection is being used (e.g., to download content or to send/receive email), the method checks the availability of the connection again later. However, if the Internet connection is not being used,

a request is sent to the ad server for information such as the file name, the offset from the file start where the block should be downloaded, and the determined ad block size.

The method in the Buch reference differs from that of Applicants' invention of claim 28 in that Buch's method does not request and download data in the background during other network activity. The method in the Buch reference does not request and download data when the actual network bandwidth utilization is less than a threshold level that is calculated as a function of a maximum monitored level of actual network bandwidth utilization. Instead, the method in the Buch reference only requests and downloads data when the user is not actively using the Internet connection. These are substantial differences because the downloading of data using the invention of claim 28 is not limited to times when the user's Internet connection is not being actively used as discussed in the Buch reference. This is a significant difference as the invention of claim 28 provides a benefit over the method in the Buch reference in that data may be downloaded while other network activity occurs. The Examiner acknowledges that the Buch reference fails to teach or suggest multiple limitations of independent claim 28 (*see, e.g., Office Action dated 8/2/2007*, p. 13), but minimizes the extent of the differences between the invention of claim 28 and the Buch reference as noted above.

The Rakavy and Garg references were relied on by the Examiner in an attempt to demonstrate that the differences between the invention recited by claim 28 and the Buch reference are merely obvious differences. However, the Examiner's conclusion is based on not only an incorrect understanding of Applicants' invention of claim 28 with respect to the Buch reference as noted above, but an incorrect understanding of what is taught by the Rakavy and Garg references. As noted above with respect to the obviousness rejection of claims 1-9, 14-27, and 29-30, the Rakavy and Garg references, either alone or in combination, fail to teach or

suggest using a threshold level of utilization that is calculated based on an identified maximum monitored level of actual bandwidth utilization. Accordingly, the Buch, Rakavy, and Garg references, either alone or in combination, fail to teach or suggest the method of claim 28. Moreover, there is no suggestion or motivation to combine the Buch, Rakavy, and Garg references in the manner set forth in the Office Action dated 8/2/2007, nor is there any suggestion or motivation to modify the Buck, Rakavy, and/or Garg references to achieve the invention recited by claim 28. Accordingly, Applicants traverse and request withdrawal of the 103(a) rejection of independent claim 28.

CONCLUSION

For at least the reasons stated above, claims 1-10 and 12-31 are in condition for allowance. Applicants respectfully request withdrawal of the pending rejections and allowance of claims 1-10 and 12-31. If any issues remain that would prevent issuance of this application, the Examiner is urged to contact the undersigned by telephone prior to issuing a subsequent action. The Commissioner is hereby authorized to charge any underpayment amount required, or refund any overpayment amount, to Deposit Account No. 19-2112.

Respectfully submitted,

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